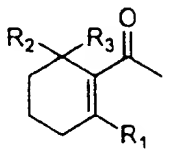
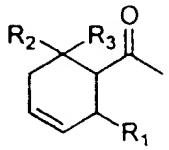
wherein R_1, R_2 and R_3 each independently represents a hydrogen atom or a methyl group and at least two of R_1, R_2 and R_3 represent a methyl group, or a 1-cyclohexenyl methyl ketone represented by the following formula (1c):



. . . (1c)

wherein R_1, R_2 and R_3 have the same meanings as defined above, or a mixture of the cyclohexenyl methyl ketones of the formulas (1b) and (1c), which comprises

isomerizing, in the presence of a catalyst, a 3-cyclohexenyl methyl ketone represented by the following formula (1a):



. . . (1a)

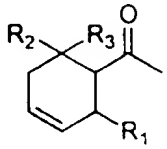
wherein, R_1, R_2 and R_3 have the same meanings as defined above, and

optionally distilling the mixture, wherein said catalyst is:

an acid catalyst; or

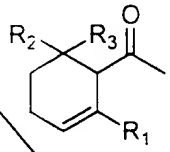
a basic catalyst, and wherein when said catalyst is said basic catalyst the isomerizing is conducted at a temperature of at least 100°C.

4. (Twice amended) A process of isomerizing, in the presence of a catalyst, a 3-cyclohexenyl methyl ketone represented by the following formula (1a):



. . . (1a)

wherein R_1, R_2 and R_3 each independently represents a hydrogen atom or a methyl group and at least two of R_1, R_2 and R_3 represent a methyl group, into a 2-cyclohexenyl methyl ketone represented by the following formula (1b):

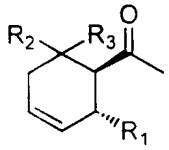


. . . (1b)

wherein R_1, R_2 and R_3 have the same meanings as defined above, or a 1-cyclohexenyl methyl ketone represented by the following formula (1c):

. . . (1c)

wherein R_1, R_2 and R_3 have the same meanings as defined above, or a mixture of the cyclohexenyl methyl ketones of the formulas (1b) and (1c) and (1a'), wherein the cyclohexenyl methyl ketone of formula (1a') is the following trans 3-cyclohexenyl methyl ketone of formula (1a'):



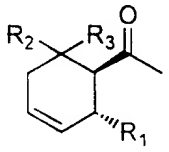
. . . (1a')

wherein R_1, R_2 and R_3 have the same meanings as defined above, wherein said catalyst is:

an acid catalyst; or

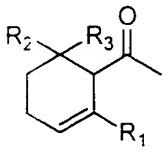
a basic catalyst, and wherein when said catalyst is said basic catalyst the isomerizing is conducted at a temperature of at least 100°C.

5. (Amended) A process for producing a mixture consisting essentially of a trans-3-cyclohexenyl methyl ketone of formula (1a'):



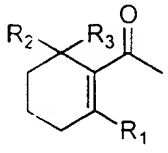
. . . (1a')

wherein R_1, R_2, and R_3 each independently represents a hydrogen atom or a methyl group and at least two of R_1, R_2 and R_3 represent a methyl group, a 2-cyclohexenyl methyl ketone of formula (1b):



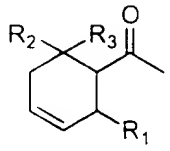
. . . (1b)

wherein R_1, R_2 and R_3 have the same meanings as defined above, and a 1-cyclohexenyl methyl ketone of formula (1c):



. . . (1c)

wherein R_1, R_2 and R_3 have the same meanings as defined above, which comprises isomerizing, in the presence of a catalyst, a 3-cyclohexenyl methyl ketone represented by the following formula (1a):



. . . (1a)

wherein, R_1, R_2 and R_3 have the same meanings are defined above, wherein said catalyst is:

an acid catalyst; or

a basic catalyst, and wherein when said catalyst is said basic catalyst the isomerizing is conducted at a temperature of at least 100°C.

Please add the following new claims:

6. (New) A process according to claim 1, wherein the catalyst is the basic catalyst and is selected from the group consisting of a metal amide, lithium hydroxide, potassium hydroxide, potassium methoxide and a catalyst comprising a transition metal, which transition metal is selected from the group consisting of palladium, ruthenium and rhodium.

7. (New) A process according to claim 4, wherein the catalyst is the basic catalyst and is selected from the group consisting of a metal amide, lithium hydroxide, potassium hydroxide, potassium methoxide and a catalyst comprising a transition metal, which transition metal is selected from the group consisting of palladium, ruthenium and rhodium.

8. (New) A process according to claim 5, wherein the catalyst is the basic catalyst and is selected from the group consisting of a metal amide, lithium hydroxide, potassium hydroxide, potassium methoxide and a catalyst comprising a transition metal, which transition metal is selected from the group consisting of palladium, ruthenium and rhodium.

9. (New) A process according to claim 1, wherein the catalyst is the basic catalyst and the catalyst is selected from the group consisting of potassium t-butoxide, potassium methoxide, sodium t-butoxide, sodium ethoxide, lithium t-butoxide, potassium hydroxide and sodium cyclohexylamide.

10. (New) A process according to claim 4, wherein the catalyst is the basic catalyst and the catalyst is selected from the group consisting of potassium t-butoxide, potassium methoxide, sodium t-butoxide, sodium ethoxide, lithium t-butoxide, potassium hydroxide and sodium cyclohexylamide.

11. (New) A process according to claim 5, wherein the catalyst is the basic catalyst and the catalyst is selected from the group consisting of potassium t-butoxide, potassium methoxide, sodium t-butoxide, sodium ethoxide, lithium t-butoxide, potassium hydroxide and sodium cyclohexylamide.

12. (New) A process according to claim 9, wherein the isomerizing is conducted in a solvent, and the solvent is selected from the group consisting of tetraethyleneglycol monomethyl ether, dimethyl sulfoxide, dimethylacetamide and cyclohexylamine.

13. (New) A process according to claim 10, wherein the isomerizing is conducted in a solvent, and the solvent is selected from the group consisting of tetraethyleneglycol monomethyl ether, dimethyl sulfoxide, dimethylacetamide and cyclohexylamine.

14. (New) A process according to claim 11, wherein the isomerizing is conducted in a solvent, and the solvent is selected from the group consisting of tetraethyleneglycol monomethyl ether, dimethyl sulfoxide, dimethylacetamide and cyclohexylamine.

15. (New) A process according to claim 1, wherein said catalyst is said basic catalyst and the temperature of the isomerizing is from 100°C to 190°C.